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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/800,691

03/16/2004

Paul Edward Voglewede

HAR65 031

1768

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7590

03/18/2008

Duane Morris LLP  
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EXAMINER

FOTAKIS, ARISTOCRATIS

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/800,691	<b>Applicant(s)</b> VOGLEWEDE, PAUL EDWARD	
	<b>Examiner</b> ARISTOCRATIS FOTAKIS	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01/10/2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 - 37 and 54 - 61 is/are allowed.
- 6) ☒ Claim(s) 38 - 53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 52 and 54 are objected to because of the following informalities: ECCM should be defined. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 38 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim recites of the data structure of a hopping frame which is non-functional descriptive material and is non-statutory subject matter.

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data

structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al (US 5,712,877) in view of Kim et al. ("*Antijamming performance of slow FH-CPM signals with concatenated coding and jamming estimation*" Military Communications

Conference, 2003. MILCOM 2003. IEEE Volume 2, 13-16 Oct. 2003 Page(s): 1120 – 1125, Vol.2).

Re claim 52, Ho teaches of a method of communicating data with a multiple modulation index continuous phase modulation waveform as trellis coded symbols at a fixed carrier frequency, the improvement of increasing the ECCM properties of the signal by frequency hopping, comprising the steps of: transmitting the data in a frame wherein each frame begins with an initial phase state of zero ( $\phi_0 = 0$ , Col 6, Lines 64 – 67) and ends with a final phase state of zero (Col 6, Lines 58 – 60 and Col 7, Lines 15 – 20). However, Ho does not teach of transmitting successive hopping frames at different frequencies.

Kim teaches of a slow frequency-hopping spread spectrum system with trellis-coded interleaved CPM where the phase is continuous during each hop interval (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used frequency hopping with CPM for its power and bandwidth efficient anti-jam capability (Kim, Abstract).

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. ("An innovative synchronization preamble for UHF MILSATCOM", Military Communications Conference Proceedings, 1999. MILCOM 1999. IEEE, Volume 2, 31-Oct. to 3-Nov.1999). in view of Kim et al.

Miller teaches of a method of communicating data with a multiple modulation index continuous phase modulation waveform as trellis coded symbols in data frames, the improvement of increasing the data payload of the data frames (Abstract) comprising the steps of: receiving and decoding (Viterbi, Chapter 4, Header) each data frame independently of the previous data frame without pilot symbols (pilot symbols are not used, Fig.1). However, Miller does not teach of frequency hopping used in CPM (Abstract).

Kim teaches of a slow frequency-hopping spread spectrum system with trellis-coded interleaved CPM where the phase is continuous during each hop interval (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use of frequency hopping with CPM for its power and bandwidth efficient anti-jam capability (Kim, Abstract).

***Allowable Subject Matter***

Claims 1 – 37 and 54 – 61 are allowed.

### ***Response to Arguments***

Applicant's arguments filed January 10, 2008 have been fully considered but they are not persuasive.

Applicants submit that Miller does indeed decode the preamble without pilot symbols but there is no disclosure of decoding each data frame independently of the previous data frame and such silence in Miller cannot provide prima facie support for a rejection under 35 U.S.C. § 103(a).

Examiner submits that Miller discloses of decoding the preamble without pilot symbols. Since Miller does not refer or disclose that decoding the frame requires the previous data frame, it is inherent that the frame is decoded independently.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2611

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristocratis Fotakis whose telephone number is (571) 270-1206. The examiner can normally be reached on Monday - Thursday 7 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aristocratis Fotakis/  
Examiner, Art Unit 2611

/Chieh M. Fan/

Supervisory Patent Examiner, Art Unit 2611